added, that Dr. Harris had had few equals, even if the past were included in the comparison; and they were adopted unanimously.

In accordance with the last resolution, Dr. A. A. Gould was chosen a committee to prepare a Memoir of the Life and Labors of Dr. Harris for publication by the Academy.

Four hundred and twenty-fifth meeting.

March 11, 1856. — MONTHLY MEETING.

The PRESIDENT in the chair.

Professor Lovering exhibited *L'Appareil Régulateur de la Lumière Electrique*, as contrived and constructed by M. J. Duboscq, of Paris, and presented the following translation of his description of the mechanism: —

"If two metallic wires are attached to the two poles of an energetic voltaic battery, and the free ends of these wires terminate in thin rods of compact carbon from gas retorts or of graphite, at the moment when the two carbon rods touch, a vivid spark is seen to play between the nearest points. If the two rods remain in contact, they grow warm gradually up even to a red heat; next, a part of the carbon is inflamed, burns, and disappears; another portion seems to be volatilized, and little by little the two extremities of the carbon rods, which touched one another, separate more and more, from waste of material, without on this account any cessation of the current circulating in the pile, the wires, and the carbon rods. The part of the rods which has disappeared is found to be replaced by a luminous purple jet, in which incessantly whirls an incandescent vapor of carbonized particles, which the negative pole seems to abstract from the positive pole, or which the latter projects towards the former. The distance between the carbon points has a limit, depending on the intensity of the current, beyond which the purple light is extinguished, the incandescent jet ceases, and the current is interrupted. In a vacuum this distance is much greater than in air, since the electricity, not having the atmospheric pressure to overcome, darts from the carbon even before the points have arrived at contact. But the carbon, which is volatilized and condensed upon the sides of the *re-*

ceiver which contains the rods, interferes with the ease of the experiment in void spaces. It is necessary, therefore, to be content with the length of arc which can be obtained in common air, and to seek only to regulate as far as possible the consumption of carbon, and the distance at which the extremities of the rods must be held in order that the luminous arc produced shall have its *maximum* intensity. The first contrivances for attaining this end were not successful. The carbon rods were pushed together by the hand in proportion as they diminished in length; but they received not the necessary regularity or proportional quantity of motion. Petrie in England and Foucault in France had simultaneously the idea of applying the electrical current itself to regulate the advance of the carbon points, which were to conduct this same current under the form of a luminous jet. The regulator of the electrical light, by Duboscq, rests upon the same principle as the apparatus of the two physicists just named. In the regulator of Duboscq, represented in the wood-cut, an electro-magnet, excited by the action of the electrical current which circulates in the copper thread q of the coil B, inside of which is enclosed an iron cone, F, placed in the base of the instrument, attracts into contact a piece of soft iron, K. To this is attached a bent lever, L, which turns at x upon a horizontal axis, and is pressed up by a spring, s, and rests at o against a short lever, having its axis of rotation horizontal. This small lever carries at d a steel nib, the object of which is to check the toothed wheel r. This wheel has a fly, and an endless screw, V, to which a movement can be given by a second wheel, r', the pinion of which is in connection with the great toothed wheel p. The latter contains the mainspring for moving the machine. This great toothed wheel has two grooves of different diameters, the use of which will soon be indicated, and upon which run the two chains h, h', which, after having passed upon the pulleys p p, p' p', are

Fig. 1.

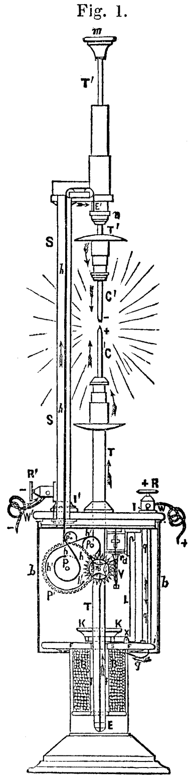
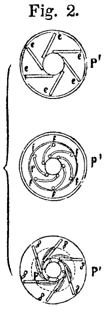


Fig. 2.



attached, at E and E′, to two copper tubes, in the prolongation of which, at C and C′, the carbon conductors are fixed. A small lever, movable by hand, carries a second nib similar to that of the small lever, and serves to stop at will the motion of the apparatus. This whole assemblage of parts is shut up in a metallic cover, the upper part of which can be raised in order to display the pieces of the interior mechanism. The following is the march of the current in the regulator when the carbon points touch, or when the luminous arc is not interrupted.

"For this purpose, assume, as most physicists do, that the electrical current advances from the positive to the negative pole, and suppose that the positive pole of Bunsen's carbon battery is in communication with the clamp R, and the negative pole with the clamp R′. The current, entering at R, descends through the wire q, which an ivory ring insulates at I and i from the brass plate W W′, and from the plate and metallic columns which support the mechanical parts of the apparatus. Running the whole length of the wire q of the coil, the current passes into the iron plate F, which constitutes the pole of the electro-magnet. The tube T, which carries the carbon rod C, touches constantly this plate F, and continues the conduction of the current, which, arriving at the place where the carbon points touch, passes from one to the other, traverses the carbon rod C′, ascends its tube T′, descends through the column S, and goes from this column to the clamp R′, which corresponds to the negative pole of the battery. The column S is insulated from the rest of the apparatus by an ivory ring I′, in order that the current, to complete its circuit, may be forced to go through the carbon rods. Things being thus disposed, the carbon points touching, or being removed by the distance best adapted to the most brilliant arch of light, the plate F will be strongly magnetized by the action of the current; the iron K will be drawn into contact; its levers will rest against the toothed wheel r, and, even when the spring in the wheel P is wound up, all will remain in equilibrium in the interior of the apparatus. The electricity will continue to pass, wasting the carbon C by the transfer of its molecules to the carbon C′, and both of them by their lively and rapid combustion in the air. After a certain time, the carbon points will be so much separated that the current experiences a considerable resistance in breaking through the intervening space. The intensity of the current being diminished, the spring s will destroy the contact of K; its levers will discharge their function; the tooth d will quit the wheel r; the main-spring will

set in motion the wheel P, and the regulating parts r, r', which are attached; the chain h', which moves the carbon-holder of the positive pole, rolling up on the groove of p', will make the carbon C ascend, while the chain h, unrolling from about the groove of p, will make the corresponding carbon C′ descend. The ratio of the diameter of the pulleys p, p' can be changed by a special system of elastic pressures belonging to the groove p of the pulley of the negative pole, and which is represented on a large scale in Figure 2. By the help of a key, any dimension wished is given to the pulley p. This dimension must always be such that the point of contact of the two carbons shall be maintained at the same elevation, in spite of the more rapid waste of the positive pole. Now the quantity by which the negative carbon descends, and that by which the positive carbon mounts, are proportioned to the circumferences of the respective pulleys, and these circumferences are in the same ratio as their diameters. If the positive carbon is wasted three times more rapidly than the negative carbon, the pulley p' must have three times as large a diameter as the pulley p, in order to maintain the point of junction at a constant level. The ratio of the diameter of the two pulleys must be regulated by trial every time the carbons are changed, since a difference in their diameters or their densities may cause a great difference in the waste of the two incandescent extremities. The contact-maker K is provided with a driving-screw, so as to alter at will its distance from the electro-magnet, according to the energy of the pile used, which struggles with more or less force against the spring s, which resists contact. The place at which it is best to stop the contact-maker K is easily discovered by a hissing which is produced when the carbons are too near. This screw is so turned as first to provoke this hissing, and then turned gently in the opposite direction until the noise ceases. The proper place for experiment is where the hissing stops. If within or without this position, the carbons are too near or too distant.

"The tube of the negative carbon is provided at n with a nut or an articulated knee, by which there can be impressed upon it, with the aid of the buttoned stem m, a slight conical movement around the vertical, so as always to make its point coincide exactly with that of the positive carbon. After one or two experiments with this apparatus, the play of its parts presents no longer any serious difficulty, and its manipulation becomes as simple as that of the Carcel lamp, or the ordinary *lampe à moderateur.*"

Professor Lovering asked the attention of the Academy to a discussion which seems to have been going on as early as 1843, and which had been recalled to his notice by a letter which he had recently received from a friend in Cincinnati, who questioned the propriety of including among the questions for the examination of candidates for the High School of that city the following: — "Does the Mississippi River run up hill or down hill?"

"I shall introduce what I have to say upon the subject with an extract from the Common School Journal.* The article from which I make the extract is headed 'Geographical Error.' The writer says: —

"'The following egregious blunder, with the captivating title '*Water running up Hill*,' is going the round of the public papers, to be caught up by thousands of school-teachers, and imprinted upon the minds of tens of thousands of scholars. *Dr. Smith, in a recent lecture on Geology, in New York, mentioned a curious circumstance connected with the Mississippi River. It runs from north to south, and its mouth is actually four miles higher than its source: a result due to the centrifugal motion of the earth. Thirteen miles is the difference between the equatorial and polar radius; and the river, in two thousand miles, has to rise one third of this distance, it being the height of the equator above the pole. If this centrifugal force were not continued, the rivers would flow back, and the ocean would overflow the land.*'

"This statement of Dr. Smith, when separated from the paradoxical declaration with which the newspapers have heralded it, is wholly correct, except in the numerical details, in which Dr. Smith evidently did not aim at great precision. But the writer in the Journal (who is understood to be President Horace Mann) not only attacks the accuracy of these details, but assails the mechanical princ iplewhich lies at the foundation of Dr. Smith's statement; saying, that 'it would be difficult to compact a greater number of errors of fact and of principle into one short paragraph, than are found in the above quotation.' The precise numbers involved in this question are of secondary importance. I am willing, and Dr. Smith no doubt is willing, that Mr. Mann

* Vol. V. p. 65.

should have the numbers as he states them. Suppose then that the length of the Mississippi River, *measured on a meridian*, is only fourteen hundred miles, and that the mouth is only about two and a half miles more distant from the earth's centre than the source. The question arises whether the flow of the river from north to south is caused by the centrifugal force, or whether the criticism of Mr. Mann upon this mechanical solution of the problem is sound. The critic asks: 'Why then does not the mighty force which sends the Mississippi *up hill* four miles send the Nile back to the Mountains of the Moon?' And again he asks: 'Why does not the centrifugal motion of the earth drive the waters of the Atlantic and Pacific Oceans towards the equator, at the rate of ninety-six miles a day?'

"Let us attend next to Mr. Mann's own explanation of the flow of the Mississippi. After enlarging upon the protuberant matter at the earth's equator, he continues: 'Now water, like every other material thing, is attracted towards the centre of gravity. The centre of gravity is that point about which all the parts are *in equilibrio*. Or, in popular language, water, like everything else, being attracted by matter, is most attracted, other things being equal, by the greatest quantity. The only philosophical idea we can have of *up* or *down* is *from* or *towards* the point of greatest attraction, that is, from or towards the centre of gravity.' Elsewhere, this writer speaks of the earth 'being an oblate spheroid, having the greatest quantity of matter, *and therefore the greatest attraction*, under the equator.' Finally he says: 'The whole truth is, that the waters of the Mississippi are constantly tending to the common centre of attraction; but, being prevented from approaching that centre *in a direct line*, they approach it indirectly, by moving forwards along the bed of the channel. They are constantly approaching the centre of gravity, that is, *they are constantly descending*.'

"One error into which Mr. Mann has fallen is that of supposing that the attraction which the earth exerts at any particular point of its surface is a local phenomenon, and not the resultant of the aggregate attractions of every particle of matter in the earth. This error leads him to a conclusion contradicted by the experiments and observations of the last two centuries; namely, that where there is the most matter, there is also the most attraction, and that consequently the attraction is stronger at the equator than it is at the poles. We might ask Mr. Mann why this mighty force of attraction does not send the

Nile back to the Mountains of the Moon. My own answer is, that this excess of attraction at the equator does not exist, and therefore neither carries the Mississippi towards its mouth, nor tends to carry the Nile back from its mouth. To many, the assumption will seem a plausible one, that the excess of *matter* at the equator should be accompanied with a redundancy of attraction there. They forget that the *whole earth* attracts everywhere. And calculation proves that the attraction of the whole earth upon a body at the surface is greater the nearer this body is to the poles; and for this obvious reason. The excess of equatorial matter operates to the prejudice of equatorial gravity, by keeping the rest of the earth at an unusually large distance. Moreover, it is of no importance to the flow of the Mississippi whether the stronger attraction is at the equator or at the poles; since the flow of water is determined, not by the intensity of the gravity at the place where the water is, or anywhere else, but by the direction of this gravity in relation to the surface at that place.

" Again, Mr. Mann speaks of the centre of gravity of the earth, and says that the waters of the Mississippi are constantly approaching this centre of gravity. But why is it that the Nile moves northward? Does that also approach constantly the same centre of gravity? The whole argument from the centre of gravity of the earth is fallacious. For the earth has no fixed centre of gravity. There is a new centre of gravity to the earth for every new spot of surface which an attracted body visits. Water could not flow in any direction without approaching some of these centres of gravity, and deserting others. And, in fact, the waters at the mouth of the Mississippi are farther from the centre of gravity which belongs to the geographical situation of the mouth, than the waters of the sources of the river are from the centre of gravity which belongs to the position of these sources. In the case of the Nile, exactly the reverse of this is true.

" What, then, is the true mechanical principle which is applicable to these cases? It is this. The mutual attraction of the particles of matter upon each other, which, if undisturbed, would mould a yielding earth into the form of a perfect sphere, have been so modified by the centrifugal force, resulting from the planet's rotation, as to make the figure of an ellipsoid, in which the largest radius exceeds the shortest by thirteen miles, the true figure of equilibrium. Cohesion enables the solid land to hold out to a limited extent against these moulding influences. But the free waters yield readily to their plas-

tic touch, and are at rest only so long as the figure of equilibrium is unruffled, and always move in such a way as to restore it when it is disturbed. Water everywhere flows from places which are above the surface of equilibrium to places which are below it. The mouth of the Mississippi is two and a half miles more distant from the earth's centre of figure than the source. But it ought to be three miles. It is, therefore, below the surface of equilibrium. And the water flows south to fill it up to the proper level. The source of the Nile ought to be about two and a half miles more distant from the earth's centre than the mouth of that river. But the excess of distance is more than two and a half miles. Hence the source is above the figure of equilibrium, and the waters flow as they do. The same mechanical causes, which originally swept the two oceans from the poles to the equator in order to build up that great equatorial embankment of water thirteen miles high, and thus give the earth a stable figure, are now carrying the Mississippi *to its mouth*, where the embankment is not yet high enough, and the Nile *from its source*, where the liquid embankment is too high. And here I may answer Mr. Mann's inquiry, 'Why does not the centrifugal motion of the earth drive the waters of the Atlantic and Pacific Oceans towards the equator?' It did once. But sufficient water has already gone to make the figure perfect now. Inasmuch as the earth's waters flow so as to restore the ideal figure of equilibrium wherever it is lost, and inasmuch as this figure of equilibrium is such that the resultant of gravity and the centrifugal force must be everywhere normal to its surface, the direction and the velocity of the flow are intimately connected with the centrifugal force. Without a rotation, and the centrifugal force which rotation produces, the earth's figure of equilibrium would be a sphere. In this event, the Mississippi would flow northward. Its southern direction, under existing circumstances, may therefore be fairly attributed to the centrifugal force. If the earth did not rotate, and the sphere were the figure of equilibrium, the Nile would flow in direction as it now does, but much more rapidly. Under existing circumstances, the same centrifugal force which accelerates the flow of the Mississippi retards the flow of the Nile.

"If the inquiry be made whether the Mississippi runs *up hill* or down, I reply that this is simply a question of definition. If *down* means towards the earth's centre of figure, then the Mississippi runs up. If *down* means towards that part of the earth's surface where

the attraction is greatest, then also the Mississippi runs up. We cannot say, with Mr. Mann, that *down* means towards the earth's centre of gravity, because the earth has no single centre of gravity. His definition of *up* and *down*, therefore, is without any meaning, and is not, as he says, based upon the only philosophical idea we can have of these terms. The only standard level of altitude is the surface of equilibrium. If we understand by *down* 'below the surface of equilibrium,' and by *up* 'above the surface of equilibrium,' then our definitions will be as broad as nature's laws, and will lead to no paradoxes, all of which nature abhors more than a vacuum : then all the rivers will be found flowing downward. On a small scale, and in local mechanics, an inclined plane is one which is inclined to the local plumb-line. But on a large scale, such as will take in the whole length of a great river, every plane surface is inclined to every plumb-line but one, and the surface which is not inclined, and on which, therefore, a body has no tendency to slide, is a surface which is everywhere perpendicular to the plumb-lines which intersect it; that is, it is the earth's surface of equilibrium. This is the only true, broad, and universal standard of level.

"It may be concluded from what has been said, that the new hydrostatic paradox is of man's invention, and that nature is in no way responsible for it. Science abounds in such paradoxes; and men of science are too prone to array the merest truisms in paradoxical language which catches the popular ear, though at the sacrifice of making science itself vulgar. Moreover, if the explanation which I have given of the paradox under consideration is beyond the knowledge or above the comprehension of a child, then the question which involves it is unfit to be addressed to him."

Professors W. B. Rogers and D. Treadwell offered some remarks upon the subject, and expressed their concurrence in the view taken of it by Mr. Lovering.

DONATIONS TO THE LIBRARY,

FROM OCTOBER, 1854, TO APRIL, 1856.

Academy of Natural Sciences of Philadelphia.

Proceedings, Vol. VII., Vol. VIII. No. 1. 8vo. Philadelphia.
Journal. New Series. Vol. III. Part II. 4to. Philadelphia.

Francis Wayland.

The Elements of Intellectual Philosophy. By Francis Wayland, President of Brown University. 1 vol. 12mo. Boston. 1854.

Academy of Sciences, Arts, and Belles-Lettres, Dijon.

Mémoires pour Années 1852 – 53. 2e Série. Tome II. 8vo. Dijon.

Academy of Sciences, Arts, and Belles-Lettres, Caen.

Mémoires, 1829, 1836, 1851, 1852. 4 vols. 8vo. Caen.

Julien Travers.

Rapport sur les Travaux de l'Académie des Sciences, Arts, et Belles-Lettres de Caen, lu dans Séance publique du 24 Novembre, 1853. Par M. Julien Travers, Secrétaire. 8vo pamph. Caen. 1854.

Biographie de Charles-Gabriel Porce. 8vo pamph. Caen. 1854.

L'Anti-Rouge Almanach, Anti-Socialiste, Anti-Communiste, etc. 12mo pamph. Paris. 1851.

Almanach Historique de la République Française contenant Ephemerides de 1848, etc. 12mo pamph. Paris. 1851.

Dionysii Catonis Disticha de Moribus ad Filium, in Gallicos Versus translata ; quibus accedit ad explanandas Quæstiones de Auctore et ejus Doctrina Morali Dissertatio. Opera Juliani Travers. 8vo pamph. Falesiae. 1837.

M. Lecerf.

De l'Organisation et de la Discipline des Églises Réformées de France. 8vo pamph. Caen. 1854.

Du Jeu considéré comme Amusement dans les Reunions de Parents et d'Amis. Etude Morale. 8vo pamph. Caen. 1852.

Tableau General et Raisonné de la Legislation Française, etc. 8vo pamph. Paris. 1841.

La Science et la Raison Humaine. En Presence des Maux et des Dangers qui menacent l'Ordre Social. 8vo pamph. Caen. 1851.

——— ———.

Les Algériennes. Poésies Nationales. 8vo pamph. Paris. 1827.

Netherlands Government.

Flora Batava. Afl. 175 – 178. 4to. Amsterdam.

Journal of the Society of Arts and of the Institutions in Union.

Vol. II., III., Vol. IV. Nos. 157 – 162, to Dec. 28, 1855.

Charles Girard.

Descriptions of New Fishes, collected by Dr. A. L. Heermann,

Naturalist attached to the Survey of the Pacific Railroad Route, under Lieut. R. S. Williamson, U. S. A. 8vo pamph. 1854.

B. A. Gould, Jr., P. D.

Astronomical Journal. Nos. 76 – 91. 4to. Cambridge. 1854 to March 19, 1856.

A. D. Bache.

Annual Report of the Superintendent of the Coast Survey, showing the progress of that work during the year ending November 1, 1853. 4to. Washington. With Maps. 1 vol. 1854.

Royal Society of London.

Proceedings. Vol. VI. Nos. 99, 101, 102, Vol. VII. Nos. 1, 2, 5 – 15, to June, 1855. 8vo. London.

Philosophical Transactions for 1853. Vol. CXLIII. 4to. London. 1853.

Philosophical Transactions for 1854. Vol. CXLIV. 4to. London. 1854.

Philosophical Transactions for 1855. Vol. CXLV. Part 1. 4to. London. 1855.

Abstracts of the Papers printed in the Philosophical Transactions, from 1800 – 1830 inclusive. 2 vols. 8vo. London. 1832 – 33.

Report of the Astronomer Royal to the Board of Visitors, read at the Annual Visitation of the Royal Observatory, Greenwich, 1854, June 3. 4to pamph. London.

Regulations of the Royal Observatory, Greenwich. 4to pamph. London, 1853.

Astronomical and Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, in the Years 1852, 1853. 2 vols. 4to. London. 1854 – 55.

Catalogue of Stars near the Ecliptic, observed at Markree during the years 1852, 1853, 1854, and whose Places are supposed to be hitherto unpublished. Vol III. containing 15,018 stars. 8vo. Dublin. 1854.

Supplement to the Practical Rules for ascertaining the Deviations of the Compass which are caused by the Ship's Iron, being Instructions for the Computation of a Table of the Deviations of a Ship's Compass, &c., &c. By Archibald Smith, Esq., M.D. Published by order of the Lords Commissioners of the Admiralty. 8vo pamph. London. 1855.

List of the Fellows of the Royal Society, 30 Nov. 1854. 8vo pamph. London. 1854.

Address of the Rt. Hon. the Earl of Rosse, &c., the President, delivered at the Anniversary Meeting of the Royal Society, Nov. 30, 1854. 8vo pamph. London. 1854.

Académie des Sciences de l'Institut de France.

Mémoires (Nouvelle Collection). 2e Série. Tome XXIV. 4to. Paris. 1854.

Mémoires Morales et Politiques. 2e Série. Tomes VIII., IX. 4to. Paris. 1854.

Mémoires Présentés par divers Savants. Sciences Mathématiques et Physiques. Tome XII. 4to. Paris. 1854.

Comptes Rendus. Tomes XXXIX. – XLI. 1854 – 55. Tome XLII. Nos. 1 – 14, to 17 April, 1856. 4to. Paris.

American Journal of Science and Arts.

Second Series. Vols. XVIII. – XXI. 8vo. New Haven. From the Editors.

Jacob Bigelow, M. D.

Nature in Disease, illustrated in various Discourses and Essays. To which are added Miscellaneous Writings, chiefly on Medical Subjects. 16mo. Boston. 1854.

Dr. H. von Martius.

Bemerkungen über die Wissenschaftliche Bestimmung und die Leistungen unserer Gewachshäuser. In Briefen an den Herausgeber der Flora. 8vo pamph. Regensberg. 1853.

Charles M. Wetherill, Ph. D.

Report on the Iron and Coal of Pennsylvania. 4to pamph. Philadelphia.

Description of an Apparatus for Organic Analysis by Illuminating-Gas ; and of the Use of this Gas in Experimental Laboratories. 8vo pamph. Philadelphia. 1854.

Description of an Apparatus for Broiling by Gas Heat. 1 page 8vo. Philadelphia.

Examination of the Gas of the Philadelphia Gas-Works. 8vo pamph. Philadelphia.

On Alexander & Morfit's Process for Organic Analysis. 2 pages 8vo. Philadelphia.

Notice on Adipocire. 1 page 8vo.

Chemical Notices. 8vo pamph. Philadelphia.

On Adipocire, and its Formations. 4to pamph. Philadelphia. 1855.

K. K. Geologischen Reichsanstalt, Wien.

Jahrbuch der K. K. Geol. Reich. Bande IV. und V. 1853–54. 8vo. Wien.

Imperial Academy of Sciences, Vienna.

Sitzungsberichte.

Math.-Natur. Classe. Band XI. Heft 5. Bande XII.–XIV. 1853 to 1854. 8vo. Wien. Band XV. Heft 1 und 2, bis Febr. 1855. 8vo pamph.

Phil.-Hist. Classe. Band X. Heft 2 und 3. Band XI. Heft 4 und 5. Bande XII.–XIV. 8vo. Wien. 1853, 1854. Band XV. Heft 1, bis Jan. 1855. 8vo pamph.

Denkschriften. Math.-Natur. Classe. Band VIII. 4to. Wien. 1854.

Registers zu den Ersten X. Banden der Sitzungsberichte der Math.-Natur. und Philos.-Hist. Classen. 2 vols. 8vo. Wien. 1854.

Geognostische Karte der Amgebungen von Krems und vom Manhardsberge, von John Czjzek.

Almanach der Kais. Akad. der Wiss. 12mo. Wien. 5ter Zahrgang. 1855.

Tafeln zu dem Vortrage; der Polygraphische Apparat der K. K. Hof und Staatsdruckerei zu Wien, von dem Wirklichen Mitgliede Alois Auer, Director der genannten Anstalt. 8vo pamph. Wien. 1853.

Professor J. A. Grunert.

Theorie der Sonnenfinsternisse, der Durchgänge der Unteren Planeten vor der Sonne und der Sternbedeckungen für einen gegebenen ort der Erde. 4to pamph. Wien. 1854.

Royal Bavarian Academy.

Gelehrte Anzeigen. Bande I.–V., XXVI. und XXVII., XXXVIII. und XXXIX., zu Dec. 1854.

Annalen der Kön. Sternwarte bei Munchen von Dr. J. Lamont. Bande VI. und VII. 8vo. Munchen. 1853–54.

Magnetische Ortsbestimmungen an verschiedenen Puncten des Königreichs Bayern und an einigen auswartigen Stationen, von Dr. J. Lamont. 1 vol. 8vo. Munchen. 1854.

Ueber das Klima von Munchen, etc., von Carl Kuhn. 4to pamph. Munchen. 1854.

Pfalzgraft Rupert der Cavalier. Ein Lebensbild aus dem XVII.

Jahrhundert Festrede, etc., von Karl v. Spruner. 4to pamph. Munchen. 1854.

Abhandlungen der Historisch. Classe. der Königl. Bayerisch. Akad. der Wissenschaften. Band V. Abth. 1. 1849. Band VII. Abth. 2. 1854. 4to.

Abhandlungen der Math.-Physik. Classe. Band III. Abth. 3. 1843. Band V. Abth 1. 1847. 4to.

Abhandlungen der Phil.-Philol. Classe. Band V. Abth. 2. 1849. Band VII. Abth. 2. 1854. 4to.

Denkschriften. Bande VI. - IX. 1816 - 24. 4to. Munchen. 1820 - 25.

Rede über das hohe Geburtsfest Sr. Maj. des Königs Maximilian II. und die Veranderung in Personalstande der Königl. Akad. der Wissen, von Friederich Thiersch. 4to pamph. Munchen. 1855.

Rede in der öffentlichen Sitzung der K. Akad. der Wiss. zu ihrer 96 Stiftungsfeier, von Friederich Thiersch. 4to pamph. Munchen. 1855.

Denkrede auf die Akademiker Dr. Thaddäus Siber und Dr. Georg Simon Ohm, ... am 28 Marz, 1855. Von Dr. Lamont. 4to pamph. Munchen. 1855.

Friedr. Wilh. Joseph v. Schelling, Denkrede, &c. . . . . am 28 Marz, 1855, von Dr. Hubert Beckers. 8vo pamph. Munchen. 1855.

Royal Society of Sciences, Göttingen.

Nachrichten. 1853, Nr. 1 - 17. 1854, Nr. 1 - 17. 12mo. Göttingen.

J. Fr. L. Hausmann.

Auffindung von Quecksilber in der Luneburgischen Diluwial-Formation. (Göttingen.) 8vo pamph.

Naturhistorischer Verein der preussischen Rheinlande und Westphalens.

Verhandlungen, XI. Jahr. Heft 3 und 4; XII. Jahr. Heft 1 und 2. 8vo. Bonn. 1854 - 55.

Royal Danish Academy.

Oversigt over det Kgl. Danske Videnskabernes Selskabs Forhandlingen, i Aaret 1843 - 47 og 1853 - 54. 8vo. Kjobenhavn.

Skriften, 5e Række. Natur. og Math. Afdeling. Forste Bind. 4to. Kjobenhavn. 1849.

J. J. Sm. Steenstrup.

Reclamation contre " la Génération Alternante et la Digenèse,"

Communication faite à la Académie de Bruxelles, par le Prof. P. J. Van Beneden. 8vo pamph. Copenhague. 1854.

Emil du Bois-Reymond.

On Signor Carlo-Matteucci's letter to H. Bence Jones, M. D., F. R. S., &c., Editor of an Abstract of Dr. Du Bois-Reymond's Researches in Animal Electricity. 8vo pamph. London. 1853.

Benjamin Apthorp Gould, Jr.

An Address in Commemoration of Sears Cook Walker, delivered before the American Association for the Advancement of Science, April 29, 1854. 8vo pamph.

B. E. Cotting, M. D.

Nature in Disease: An Address before the Norfolk District Medical Society of Massachusetts, at the Annual Meeting, May 12, 1852. 8vo pamph. Boston. 1852.

Statistics of Consumption in Roxbury. Read before the Norfolk District Medical Society of Massachusetts, at the Annual Meeting, May 17, 1854. 8vo pamph. Boston. 1854.

Royal Prussian Academy.

Abhandlungen der Königl. Akad. der Wiss. zu Berlin. 1853–54. 4to. 2 vols. Berlin. 1854–55.

Monatsbericht aus dem Jahre 1853 und 1854. 2 vols. 1855, Jan. – June. 6 nos. 8vo.

Royal Academy of Sciences, Amsterdam.

Verhandelingen der Konink. Akad. van Wetten. Deel. 1, 2. 4to. Amsterdam. 1854–55.

Verslagen en Med. Deel I. und II. 1853–54; Deel III. Sluk 1, 2. 1855. 8vo. Amsterdam.

Catalogus der Boekerij van de Kon. Akad. van Wetten, Gevestigd te Amsterdam. Erste Afl. 8vo. pamph. Amsterdam. 1855.

Kon. Besluit Tot Vorming der Akad. van Wettenschappen Organickh Reglement der Akad. Mem. van Toelichting ..... Personele Staat der Akad. 4to pamph. Amsterdam. 1855.

John C. Warren, M. D.

Genealogy of Warren, with some Historical Sketches. 1 vol. Roy. 4to. Boston. 1855.

The Great Tree on Boston Common. 1 vol. 8vo. Boston. 1855.

American Antiquarian Society.

Proceedings in Worcester, Oct. 23, 1854; in Boston, April 25, 1855. 8vo. 2 pamph. Boston.

Académie Impériale des Sciences de Saint Petersbourg.

Mémoires. VI^{me} Serie. Sciences Mathematiques, Physiques, et Naturelles. Tome Septième, Premiere Partie: Sciences Mathematiques et Physiques. Tome Cinquième, 5^{me} et 6^{me} Livraisons. 4to pamph. St. Petersbourg.

Administration of Mines of Russia.

Annales de l'Observatoire Physique Central de Russie, 1851. Parts I. and II. 2 vols. 4to. St. Petersbourg. 1853.

Compte-Rendu Annuel. 1853. (Supplement to the Annals.) 4to. St. Petersbourg. 1854.

Society of Sciences, Harlem.

Natuurkundige Verhandelingen van de Hollandsche Maatschappij der Wetenschappen te Haarlem. 10th Deel. 4to. Haarlem. 1854.

Verhandelingen uitgegeven door de Commissie belast met het vervaardigen eener Geologische Beschrijving en Kaart. van Nederland. 2d Deel. 4to. Haarlem. 1854.

Verslag van de Commissie voor de Geologische Beschrijving en Kaart van Nederland, over het verrigte van Oct. 1853, tot Oct. 1854. 4to pamph. Haarlem. 1854.

National Observatory, Washington.

Report and Charts of the Cruise of the U. S. Brig Dolphin, made under Direction of the Navy Department, by Lieut. S. P. Lee, United States Navy. 1 vol. 8vo. and Map accompanying. Washington. 1854.

C. Dumerill.

Prodrome de la Classification des Reptiles Ophidiens. 1 vol. 4to. Paris. 1854.

Dr. Aug. Dumerill.

Monographie de la Tribu des Torpédines ou Raies Electriques comprenant Un Genre Nouveau, Trois Espèces Nouvelles, et Deux Espèces Nommées dans le Musée de Paris, mais non encore décrites. 8vo pamph. Paris. 1854.

British Association for the Advancement of Science.

Report of the First and Second Meetings, at York in 1831, and at Oxford in 1832. Second edition. 1 vol. 8vo. London. 1835.

Report of the Twenty-third Meeting, held at Hull in Sept. 1853, and Twenty-fourth, held at Liverpool, Sept. 1854. 2 vols. 8vo. London. 1854 - 55.

British Government.

Memoirs of the Geological Survey of the United Kingdom. Figures and Descriptions illustrative of British Organic Remains. Decade 7. 1853. 4to pamph. London.

Museum of Practical Geology and Geological Survey. Records of the School of Mines and of Science applied to the Arts. Vol. I. Parts II., III., and IV. 8vo. London. 1853.

Prospectus of the Metropolitan School of Science, applied to Mining and the Arts. 3d Session, 1853 – 54. 8vo pamph. London. 1853.

Museum of Practical Geology, Metropolitan School of Science applied to Mining and the Arts. On the Educational Uses of Museums (being the Introductory Lecture of the Session 1853 – 1854). By Edward Forbes, F. R. S., &c. 8vo pamph. London. 1853.

Arrangement of the Fossils and Rock Specimens in the Galleries of the Museum of Practical Geology. 1 vol. 4to. London. 1853.

Arrangement of the British Marbles, Alabasters, Serpentines, Porphyries, Granites, Building Stones, &c. in the Hall of the Museum of Practical Geology. 1 vol. 4to. London.

George Bancroft.

Oration delivered before the New York Historical Society, Nov. 20, 1854. Semi-Centennial Celebration, 50th Anniversary. 8vo pamph. New York. 1854.

Hon. W. H. English.

Speech on the Smithsonian Institution, in the House of Representatives, Feb. 27, 1855. 8vo pamph. Washington. 1855.

Smithsonian Institution.

Smithsonian Contributions to Knowledge. Vol. VII. 4to. Washington. 1855.

Report of the Special Committee of the Board of Regents of the Smithsonian Institution, on the Distribution of the Income of the Smithsonian Fund. 8vo pamph. Washington. 1854.

Hon. John D. Bright.

Report of Hon. W. H. White, from the Committee of the House of Representatives to which was referred the Letter of the Hon. Rufus Choate on the Smithsonian Institution. 8vo pamph. Washington. 1855.

Dr. A. Krantz.

Catalogue of Mineralogical, Geological, and Palæontological Spe-

cimens, Collections, Models, &c. at Bonn. 8vo pamph. London. 1853.

Society of Geography of Paris.

Bulletin. 2e Série, Tomes V., VIII., IX., XX.; 3e Série, Tomes I.-XIV.; 4eme Série, Tomes I.-V., VIII., et IX. 8vo. Paris. 1836-55. 25 vols.

Hon. S. H. Walley.

The Constitution of the United States of America....Declaration of Independence; The Articles of Confederation; The Prominent Political Acts of George Washington, &c. By W. Hickey. 7th edit. 1 vol. 12mo. Philadelphia. 1854. (Pub. Doc.)

Report of the Superintendent of the Coast Survey, showing the Progress of the Survey during the Year 1853. 1 vol. 4to. Washington. 1854. (Pub. Doc.)

Exploration of the Valley of the Amazon, made under the Direction of the Navy Department, by Wm. Lewis Herndon and Lardner Gibbon, Lieuts. U. S. Navy. Part II. by Lieut. Lardner Gibbon. With Maps. 2 vols. 8vo. Washington. 1854.

Report of the Commissioner for Patents for the Year 1854.— Arts and Manufactures. 2 vols. 8vo. Vol. I. Text; Vol. II. Illustrations. 8vo. Washington. 1855. (Ex. Doc.)

Addresses on the Presentation of the Sword of Gen. Andrew Jackson to the Congress of the United States. Delivered in the Senate and House of Representatives, Feb. 26, 1855. 8vo pamph. Washington. 1855.

The Congressional Globe, containing the Debates and Proceedings of the Second Session of the Thirty-third Congress. Vol. XXX. By John C. Rives. 4to. Washington. 1855.

Appendix to the Congressional Globe, for the Second Session, Thirty-third Congress, containing Speeches, Important State Papers, Laws, &c. By John C. Rives. New Series. Vol. XXXI. 4to. Washington. 1855.

Observatory of Prague.

Astronomische Beobachtungen auf der König. Universitäts Sternwarte in Königsberg; von F. W. Bessel Erste Abth. bis Ein und Zwanzigste Abth.; von A. L. Busch Zwei und Zwanzigste bis Neun und Zwanzigste. 29 Abth. Folio. Königsberg. 1815-49.

Magnetische und Meteorologische Beobachtungen zu Prag. Von

Dr. Jos. G. Böhm und Dr. Adalbert Kunès. Zwolfter Jahrgang. 1851. 1 vol. 4to. Prag. 1854.

Franz Foetterle.

Die Geologische Uebersichtskarte des Mittleren Theiles von Sud. mit einem vorwort von W. Haidinger. 8vo pamph. Wien. 1854.

Isaac Lea.

Fossil Footmarks in the Red Sandstone of Pottsville, Pennsylvania. Folio pamph. Philadelphia. 1855.

Description of a new Mollusk from the Red Sandstone, near Pottsville, Pennsylvania. 8vo pamph. Philadelphia. 1855.

Rectification of Mr. T. A. Conrad's "Synopsis of the Family of Naiades of North America." 8vo pamph. Philadelphia. 1844.

Biographical Sketch of Richard Cowling Taylor. 8vo pamph. Philadelphia.

A Synopsis of the Family of Naiades. Third Edition, greatly enlarged and improved. 1 vol. 4to. Philadelphia. 1852.

On a Fossil Saurian of the New Red Sandstone Formation of Pennsylvania, with some Account of that Formation. Also, On some New Fossil Mollusks in the Carboniferous Slates of the Anthracite Seams of the Wilkesbarre Coal Formation. 1 vol. 4to. Philadelphia. 1852.

On the Fossil Footmarks in the Red Sandstone of Pottsville, Pennsylvania. 4to pamph. Philadelphia. 1852.

Henry C. Lea.

Description of some new Fossil Shells, from the Tertiary of Petersburg, Virginia. 4to pamph. Philadelphia.

Linnæan Society of London.

Transactions. Vol. XXI. Parts III. and IV. 4to. London. 1854-55.

Proceedings. Vol. II. 8vo. London.

List of the Society. 2 pamphs. 8vo. London. 1854-55.

Address of Thomas Bell, Esq., V. P. R. S., &c., the President. Read at the Anniversary Meeting of the Society, Wednesday, May 24, 1854. 8vo pamph.

Address of Thomas Bell, Esq., V. P. R. S., &c., the President, together with Obituary Notices of Deceased Members, by John Bennett, Esq., F. R. S., the Secretary. Read at the Anniversary Meeting of the Society, on Thursday, May 24, 1855. 8vo pamph. London. 1855.

Batavian Society of Arts and Sciences.

Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen. Deel XXV. 4to. Batavia. 1853.

Tijdschrift voor Indische Taal-Land-En Volkenkunde, uitgegeven door het Bataviaasch Genootschap van Kunsten en Wetenschappen. Jaargang I. Deel I. and II. 8vo. Batavia. 1853 - 54.

Société des Sciences des Indes Néerlandaises.

Natuurkundig Tijdschrift voor Nederlansch Indië uitgegeven door de Natuurkundige Vereeniging in Nederlansch Indië. Jaargang II. Deel II. Jaargang III. Deel III. Nieuwe Serie, Deel I. und II. 8vo. Batavia. 1851 - 54.

Algemeen Verslag der Werkzaamheded van de Natuurkundige Vereeniging in Nederlansche Indië over 1852. Voorgelezen in de Algemeene Vergadering gehouden den 17 den Februarig, 1853, door Dr. P. Bleeker, R. O. N. L., &c. 8vo pamph. Batavia. 1853.

C. L. Flint.

First and Second Annual Report of the Secretary of the Massachusetts Board of Agriculture, together with the Reports of the Committees appointed to visit the County Societies, with an Appendix, containing an Abstract of the Finances of the County Societies. 2d Series. 2 vols. royal 8vo. Boston. 1854 - 55.

Observatory of Harvard College.

Annals of the Astronomical Observatory of Harvard College. Vol I. Part II. 1852 - 53. 4to pamph. Cambridge. 1855.

Charles F. Barnard.

Proceedings of the Eighteenth and Nineteenth Annual Meetings of the Association for the Support of the Warren Street Chapel, together with Mr. Barnard's Report. 2 pamph. 12mo. Boston. 1855 - 1856.

American Philosophical Society.

Proceedings. Vol. VI. No. 53, Jan. - April, 1855; No. 54, May - Dec. 1855. 8vo. 2 pamphs. Philadelphia.

New York University.

Sixty-eighth Annual Report of the Regents of the University of the State of New York. 1 vol. 8vo. Albany. 1855.

Eighth Annual Report of the Regents of the University, on the Condition of the State Cabinet of Natural History, and the Histori-

cal and Antiquarian Collection annexed thereto. 8vo pamph. Albany. 1855.

Royal Irish Academy.

Transactions. Vol. XXII. Parts V. and VI. 4to. 2 pamphs. Dublin. 1855.

Proceedings for the Year 1853 - 54, Vol. VI. Part I.; for 1854 - 55, Vol. VI. Part II. 8vo. 2 pamphs. Dublin. 1854 - 55.

El Observatorio de Marina de San Fernando.

Almanaque Nautico, para el Año 1856, calculado de Orden de S. M. en el Observatorio de Marina de la Ciudad de San Fernando. 1 vol. 8vo. San Fernando. 1854.

Albany Institute.

Transactions. Vol. III. and Vol. IV. Part I. 8vo. Albany. 1855.

New York State Library.

Annual Report of the Trustees. 8vo pamph. 1855.

J. A. Grunert.

Theorie der Sonnenfinsternisse der durchgänge der Unteren Planeten vor der Sonne und der Sternbedeckungen für die Erde Überhaupt. 1 vol. 4to. Wien. 1855.

Academy of Sciences, &c. of Rouen.

Prēcis Analytique des Travaux de l'Académie, pendant l'Année 1853 - 1854. 1 vol. 8vo. Rouen. 1854.

M. Emanuel Liais.

Considerations sur le Climat de Cherbourg. 8vo pamph. Cherbourg. 1849.

Note sur les Observations faite à Cherbourg (Manche) pendant l'Eclipse du 28 Juillet, 1851. 8vo pamph. Cherbourg. 1851.

Mémoire sur un Bolide observé dans le Départment de la Manche le 18 Nov. 1851. 8vo pamph. Cherbourg. 1852.

Recherches sur la Température de l'Espace Planetaire. 8vo pamph. Cherbourg.

Sur les Sources de Lumière et les Causes de Non-Interférence. 8vo pamph. Cherbourg. 1853.

De l'Influence de la Latitude sur la Pression-Moyen du Baromètre et sur la Direction générale du Vent à la Surface du Sol. 8vo pamph. Versailles. 1854.

M. Auguste le Jolis.

Mémoire sur l'Introduction et la Floraison a Cherbourg d'une Espece peu connue de Lin de la Nouvelle-Zélandé et Revue des

Plantes confondues sous le Nom de Phormium Tenax. 8vo pamph. Cherbourg. 1848.

Note sur l'Œdipode Voyageuse ou Sauterelle de Passage Trouvée à Cherbourg. 8vo pamph. Cherbourg. 1851.

Procedure au XV^e Siècle relative à la Confiscation de Biens saisis sur un Anglais, et à leur Adjudication en Faveur d'une Capitaine de Cherbourg. 8vo pamph. Cherbourg. 1851.

Notice sur l'Origine et l'Etablissement de la Foine Lait Clair de Querqueville. 8vo pamph. Cherbourg. 1852.

Quelques Réflexions sur l'Etude de la Botanique et Details sur le Mode de Reproduction des Algues Zoosporées. 8vo pamph. Cherbourg. 1852.

Observations sur les Ulex des Environs de Cherbourg. 8vo pamph. Cherbourg. 1853.

Royal Academy of Sciences, &c. of Belgium.

Bulletins de l'Académie. Tome XIX. 3^e Partie. Tome XX. 1, 2, et 3 Partie. Tome XXI. 1^e Partie, et Tome Annexe aux Bulletins. 6 vols. 8vo. Bruxelles. 1852 – 1854.

Mémoires Couronnés et Mémoires des Savants Etrangers, publiés par l'Académie. Tome XXV. 1851 – 53. 1 vol. 4to. Bruxelles. 1854.

Mémoires Couronnés, etc. Collection in 8vo. Tome V. 2^e Partie. Tome VI. 1^e Partie. 2 pamph. Bruxelles. 1853.

Mémoires de l'Académie Royale de Belgique. Tome XXVII. 4to. Bruxelles. 1853.

Annuaire de l'Acad. Roy. de Belgique. 19 et 20 Année. 1853 – 54. 2 vols. 16mo. Bruxelles.

A. Quetelet.

Annuaire de l'Observatoire Roy. de Bruxelles, par A. Quetelet, pour 1853. 20^e Année. 1 vol. 16mo. Bruxelles. 1852.

Almanach Séculaire de l'Observatoire, par A. Quetelet. 1 vol. 16mo. Bruxelles. 1854.

Annales de l'Observatoire. Tome X. 4to. Bruxelles. 1854.

Observations des Phénomènes Périodiques, pour 1852. 4to pamph. Bruxelles. 1852.

Academiä Naturæ Curiosorum.

Novorum Actorum Acad. Cæsareæ Leopoldino-Carolinæ Nat. Curiosorum. Vol. XXIV. Pars Posterior, cum Tabulis XVII. 4to. Vratislaviæ et Bonnæ. 1854.

Fest-Bericht den Zehnjahrigen Stiftungsfeier des Vereins Ärzte

in Paris ..... von Dr. H. L. Medig. 4to pamph. Breslau. 1854.

J. A. Grunert.

Über die Proximitaten der Bahnen der Planeten und Kometen. 8vo pamph. Wien. 1854.

Royal Society of Northern Antiquaries.

Mémoires, 1848 – 49. 1 vol. 8vo. Copenhague. 1852.

Saga Játvardar Konúngs Hins Helga, Udgiven Efter Islandske Oldböger af det Kongelike Nordiske Oldskrift Selskab. 1 vol. 8vo. Kjobenhavn. 1852.

Vestiges d'Asserbo et de Soborg, Découverts par S. M. Frédéric VII., Roi de Danemark. Mémoire publié par la Société Royale des Antiquaires du Nord. 1 vol. 8vo. Copenhague. 1855.

The Discovery of America by the Northmen, and Connection of the Northmen with the East. By Charles C. Rafn. 8vo pamph. Copenhagen.

Cabinet d'Antiquités Americaines. 8vo pamph. Copenhague.

Die Kön. Gesell. für Nordische Altenthumskunde zu Kopenhagen. Jahresversammlungen in den Jahren 1848 – 52. 8vo pamph. Kopenhagen.

Daniel Treadwell.

The Relations of Science to the Useful Arts. A Lecture delivered to the American Academy of Arts and Sciences, Nov. 1852. 8vo pamph. Cambridge and Boston. 1855.

M. Flourens.

Eloge Historique de Benj. Delessert, Académicien Libre. Royal 8vo pamph. Paris. 1850.

Professor Wm. B. Rogers.

Address before the Lyceum of Natural History of Williams College, August 14, 1855. 8vo pamph. Boston. 1855.

Joseph Leidy, M. D.

Contributions towards a Knowledge of the Marine Invertebrate Fauna of the Coasts of Rhode Island and New Jersey. 4to pamph. Philadelphia. 1855.

A Memoir on the Extinct Sloth Tribe of North America. 4to pamph. Washington.

Jeffries Wyman.

Description of a Portion of the Lower Jaw and a Tooth of the Mastadon Andium; also, of a Tooth and Fragment of a Femur of a Mastadon Chile. 4to pamph.

Boston Society for the Prevention of Pauperism.

Twentieth Annual Report. 8vo pamph. Boston. 1855.

Royal Society of Sciences, Leipzig.

Berichte über die Verhandlungen der Kön. Sach. Gesell. der Wissen. Philol.-Historisch. Classe. Band VI. Heft 1–6. Band VII. Heft 1 und 2. 8vo. Leipzig. 1854–55.—Math.-Phys. Classe. 1853, Heft 3; 1854, Heft 1 und 2. 8vo. Leipzig. 1854.

Abhandlungen der Math.-Phys. Classe. Vol. IV. Royal 8vo. Leipzig. 1855.

Gedächtnissrede auf Seine Majestät Friederich August König von Sachsen, in der öffentlichen sitzung der Kön. Sachs. Gesell. der Wissen. am 27 Oct. 1854. Gehälten von E. V. Wieterstreim. 8vo pamph. Leipzig. 1854.

T. A. Quevenne.

Archives de Physiologie de Therapeutique et d'Hygiene. No. 2. Oct. 1854.

Mémoire sur l'Action Physiologique et Therapeutique des Ferrugineux. 1 vol. 8vo. Paris. 1854.

Augustus A. Gould, M. D.

Search out the Secrets of Nature. The Annual Discourse before the Massachusetts Medical Society, at Springfield, June 27, 1855. 8vo pamph. Boston. 1855.

J. A. Lapham.

A Geological Map of Wisconsin. Fol. New York. 1855.

United States Patent-Office.

Report of the Commissioner of Patents for the Year 1854. Arts and Manufactures. 2 vols. 8vo. Vol. I. Text; Vol. II. Illustrations. Washington. 1855. (Pub. Doc.)

Col. W. H. Swift.

Reports of Explorations and Surveys, to ascertain the most practicable and economical Route for a Railroad from the Mississippi River to the Pacific Ocean, made under the Direction of the Secretary of War in 1853–54. With 3 maps. Vol. I. 4to. Washington. 1855. (Pub. Doc.)

E. E. Salisbury.

Phœnician Inscription of Sidon. (Extract from the Journal of the Am. Oriental Soc.) Vol. V. No. 1. 8vo pamph.

American Association for the Advancement of Science.

Proceedings of the Seventh Meeting, held at Cleveland, Ohio,

July, 1853; Eighth, at Washington, D. C., May, 1854; Ninth, at Providence, R. I., August, 1855. 3 vols. 8vo. Cambridge. 1855 - 56.

American Oriental Society.

Journal. Vol. V. No. 1. 8vo pamph. New Haven. 1855.

Col. Edward Sabine, R. A.

Magnetical and Meteorological Observations at Lake Athabasca and Fort Simpson, by Capt. J. H. Lefroy, Royal Artillery; and at Fort Confidence in Great Bear Lake, by Sir John Richardson, C. B., M. D. Printed by order of Her Majesty's Government. 1 vol. 8vo. London. 1855.

Société des Sciences Naturelles de Cherbourg.

Mémoires. 2e Tome. 8vo. Cherbourg. 1854.

Société Imperiale des Naturalistes de Moscou.

Bulletin de la Société. Tome XXVI., Année 1853, Nos. 3 et 4. Tome XXVII. Année 1854, No. 1. 8vo. Moscou. 1853 - 54.

Société des Sciences Naturelles de Neuchatel.

Bulletin de la Société. Tome III. pp. 95 - 182. 8vo. Neuchatel. 1854.

Lieutenant J. M. Gilliss.

The United States Naval Astronomical Expedition to the Southern Hemisphere during the Years 1849, 1850, 1851, 1852. Lieut. J. M. Gilliss, Superintendent. 2 vols. 4to. Washington. 1855. (Pub. Doc.)

Origin and Operations of the United States Naval Astronomical Expedition. 4to pamph. Washington. 1854.

William H. Prescott.

History of the Reign of Philip the Second, King of Spain. 2 vols. 8vo. Boston. 1855.

Essex Institute.

Act of Incorporation, Constitution, and By-Laws of the Essex Institute, incorporated February, 1848. With a Catalogue of the Officers and Members. 8vo pamph. Salem. 1855.

N. B. Shurtleff.

Thirteenth Report to the Legislature of Massachusetts, relating to the Returns of Births, Marriages, and Deaths in the Commonwealth for the Year ending December 31, 1854. By E. M. Wright, Secretary of the Commonwealth. 1 vol. 8vo. Boston. 1855.

G. W. Manypenny.

Information respecting the History, Condition, and Prospects of the Indian Tribes of the United States. Collected and prepared under the Direction of the Bureau of Indian Affairs, by Act of Congress of March 3d, 1847. By Henry R. Schoolcraft, LL. D. Illustrated by S. Eastman, Captain in the United States Army. Part V. 4to. Philadelphia. 1855.

Selectmen of Medford.

History of the Town of Medford, Middlesex County, Massachusetts, from its First Settlement in 1630 to the Present Time, 1855. By Charles Brooks. 1 vol. 8vo. Boston. 1855.

Royal Institution of Great Britain.

Notices of the Meetings of the Members. Part V. November, 1854 – July, 1855. 8vo pamph. London. 1855.

Zoölogical Society of London.

Transactions. Vol. IV. Parts 1 – 3. 4to. London. 1850 – 53.

Professor Sedgwick.

Description of the British Palæozoic Fossils in the Geological Museum of the University of Cambridge, by Frederick McCoy, F. G. S., &c. With a Synopsis of the Classification of the British Palæozoic Rocks, by the Rev. Adam Sedgwick, M. A., F. R. S., &c. Part II. Fasc. 3d. (Upper Palæozoic Molusca and Palæozoic Fishes.) 4to. London. 1855.

E. Clibborn.

An Essay on the Probability of Saul, Beniah, Abishai, Jehoshaphat, Jehdhannan, and Amessias, son of Zichri, having been the Hycsos Rulers, Salatis, Beon, Apachnas, Apophis, Jonias, and Assis. No. II. 8vo pamph. Dublin.

Henry D. Rogers.

Map of the Arctic Basin : its Limits, Features, Drainage, Currents, Winds, and Climates. (Plate XII. of Johnston's Phys. Atlas of Nat. Phenomena.) Fol.

Charles F. Barnard.

The Charities of Boston ; or Twenty Years at the Warren Street Chapel. An Address delivered at the Chapel by Rev. William R. Alger, Sunday Evening, January 27, 1856. 8vo pamph. Boston. 1856.

Charles Brooks.

Elementary Course of Natural History. Being an Introduction

to Zoölogy. Intended for the College and the Parlor. Elements of Ornithology. With Plates. 1 vol. 12mo. Boston. 1847.

History of the Town of Medford, Middlesex County, Massachusetts, from its First Settlement in 1630 to the Present Time, 1855. By Charles Brooks. 1 vol. 8vo. Boston. 1855.

The Commissioners of the Public Library.

Proceedings on the Occasion of Laying the Corner-Stone of the Public Library of the City of Boston. 1 vol. 8vo. Boston. 1855.

S. L. Abbot, M. D.

Report of the Board of Trustees of the Massachusetts General Hospital. Presented to the Corporation at their Annual Meeting, January 23, 1856. 8vo pamph. Boston. 1856.

Royal Academy of Sciences, Stockholm.

Ofversigt af Kongl. Vetenskaps-Akademiens Förhandlingar-Tionde Årgången, 1853; Elfte Årgången, 1854. 2 vols. 8vo. Stockholm. 1854 – 55.

Four hundred and twenty-sixth meeting.

April 8, 1856. — MONTHLY MEETING.

The Academy met at the house of the Hon. John C. Gray. The President in the chair.

The Corresponding Secretary read a letter from Dr. J. P. Kirtland of Cleveland, Ohio, accepting Fellowship.

Mr. G. P. Bond presented a paper "On the Use of Equivalent Factors in the Method of Least Squares," which, on motion of Professor Lovering, was referred to the Committee of Publication.

Professor Eustis exhibited an apparatus illustrating a peculiar case of warped surfaces. The apparatus consisted of two planes at equal distances from each other, having upon their contiguous surfaces, and opposite to each other, figures of an ellipse. From the whole circumference of each of these ellipses cords were tightly drawn obliquely across to a corresponding but opposite point in the other. The effect, on looking through an aperture in the middle of the apparatus, was a very peculiar series of curves, resulting from the crossing of so many straight lines.